

Application No. 09/651,754

Docket No. 20-0139

REMARKS

Claims 1-22 were presented for reconsideration after filing a request for continuing examination of this application. In the aforementioned Office action, claims 1-22 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Phillips et al. (US 6,072,994), of record, in view of Fleeson (US 6,353,846), newly cited. By this amendment, the independent claims have been further amended to distinguish the invention more clearly over the cited art. The claims are submitted for reconsideration and reexamination in light of the remarks that follow.

In comments accompanying the rejection, the Examiner asserted with respect to claim 1 that "Phillips et al. teach a transceiver-processor building block ... comprising: a plurality of bi-directional transceivers (figure 3 and column 15 lines 55-63); a processor coupled to the transceivers (figure 3 and column 15 lines 55-63);" and other elements of the invention to be further discussed below. Applicant respectfully disagrees with the contention that a plurality of transceivers are taught by FIG. 3 and the cited text in column 15.

FIG. 3 discloses a common programmable receive module 106 and a common programmable transmit module 204. As described in column 13, lines 8-13, "The receive module is 'common' in the sense that it can accept RF and be programmed, either by analog switching or digital software or both, to perform frequency translation and signal processing down to a low-speed serial bit stream in a channel that is programmed to one of a wide variety of CNI functions." Accordingly, it is clear from the description that the common receive module, and similarly the common transmit

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module, are programmed to perform different CNI receive and transmit functions. As further explained in column 18, lines 50-54, the common receive and transmit modules 106 and 204 "can be programmed to process one of many different types of CNI radio functions and such processing can be rapidly time-multiplexed among multiple CNI radio functions."

FIG. 3 of the Phillips patent, and its accompanying description, shows the use of a single "common" receive module and a single "common" transmit module, which are programmed to perform multiple radio functions by time-multiplexing. The figure also mentions "spare" receive channel(s) and "spare" transmit channel(s), but beyond this there is no disclosure in FIG. 3 of a plurality of bi-directional transceivers. Moreover, the cited passage in column 15, lines 55-63, does not appear to support the Examiner's assertions. The passage refers to an antenna 102 and an antenna interface unit (AIU) module 104, and broadly describes the function of the AIU in relation to the common receive module 102. The only possible inference one can make from reliance on this passage is that the Examiner is equating the "processor" of the present invention with the AIU module 104 of FIG. 3. This inference is consistent with the Examiner's next contention, which is that the AIU control bus 326 is equivalent to the local RF bus of the present invention, coupled between the processor and the transceivers. As described in the referenced paragraph, the AIU control bus 326 comprises digitally controllable single-pole multi-throw (SPMT) switches used to select or deselect a spare receive or transmit module. It is also noted in the same paragraph that normally only one such spare module is required for each of the receive and transmit functions.

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The comments accompanying the rejection of claim 1 also allege that the Phillips et al. patent teaches "a network bus coupled to the processor 324 (figure 3); and a radio network bus connector coupled to the network bus to the radio network bus to provide direct accessibility to the radio network bus"

Reference numeral 324 refers to an optional message bus extending outside the system channel 300 of FIG. 3, but this bus is not coupled to the "processor" of FIG. 3, which the Examiner has equated to the AIU 308. More critically, there is a serious difficulty in locating a building block similar to that of the invention in the Phillips et al. disclosure. If the system channel 300 of FIG.3 is the Phillips et al. "building block," there is no plurality of simultaneously operable bi-directional transceivers within the building block, and no processor coupled to the transceivers, and no local RF control bus coupled between the processor and the transceivers, and no network bus coupled to the processor, and no network bus connector providing direct accessibility from outside the multifunction slice, in the manner depicted in Applicant's FIG. 2, for example.

The Examiner concedes that Phillips et al. do not disclose simultaneously operable transceivers, but cites Fleeson as disclosing "as well known a software definable radio (SDR) (read as the claimed transceiver building block) that comprises, among other components, a plurality of RF modules (bi-directional transceivers) that are simultaneously operated to offer a variety of operations or functions according to the particular needs at any given time (column 2 line 13 – column 3, line 10)."

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Applicant acknowledges that the concept of a software definable radio (SDR) is well known, as noted in Fleeson. There is, however, nothing in Fleeson that would suggest the "building block" or modular construction concept employed in the present invention. The Examiner equates the SDR mentioned by Fleeson as the "building block." Yet there is no teaching or suggestion in Fleeson of the interconnection of multiple SDR building blocks, and no teaching of an SDR that has the necessary structure to facilitate interconnection of multiple SDRs in the manner in which the building blocks of the present invention may be interconnected. Even assuming, without conceding, that Fleeson teaches multiple, simultaneously operable bi-directional transceivers, such a teaching would not suggest the building block concept of the present invention because Fleeson merely mentions the existence of the SDR concept, without defining any structure for combining multiple SDRs, which the Examiner has equated to building blocks.

Moreover, Fleeson is concerned with resource management, specifically a method and system for allocating existing resources to implement a functional unit, such as a radio function. Although this general goal is also shared by the present invention, the present invention differs both from the Fleeson disclosure and from that of Phillips et al. Fleeson simply does not have the building block structure claimed in the present application. Phillips et al. teaches a digitally programmable multifunction radio system architecture, but also does not suggest the building block structure of the present invention.

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Claim 1 has been further amended in an effort to clarify these distinctions over the cited art and is, therefore, believed to be allowable. The claims dependent on claim 1 are believed to be allowable for the same reasons, but the specific reasons for their rejection are further discussed below.

In rejecting claim 2, the Examiner contended that the cited art discloses an external control bus coupled to the processor, citing the various applications mentioned at the right side of FIG. 3. Once again, there is a difficulty in assigning elements in the cited art to the claimed features. For example, which line in FIG. 3 is the external control bus? If it is one of the lines on the right side of FIG. 3, how is the required connection with the processor established, given that the Examiner has equated the processor with the AUI 308? Further, as discussed above, the modular nature of the present invention is not disclosed by the two cited patents.

In rejecting claim 3, the Examiner contended that the cited patents disclose "that in the building block the local RF control bus carries control data from the processor to the transceivers (figure 3 and column 27 lines 45-63). Applicant concedes only that there is a connection between the receive and transmit modules 106, 204 and the AIU 308, which the Examiner contends is equivalent to the processor in the present invention. In any event, claim 3 has been cancelled and its features combined with those of claim 1.

In rejecting claim 4, the Examiner further contends that "the radio network bus carries unencrypted information and is isolated from the local RF control bus[.]" The Examiner notes that FIG. 3 of Phillips et al. clearly shows "that all information submitted

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through the network bus 324 passes through INFOSEC modules and is isolated from the RF control bus." Applicant concedes only that the Phillips et al. patent shows an optional message bus 324 that may be independent of the control bus 326. However, as noted above, the Phillips et al. patent does not disclose building blocks and any means for interconnecting them as in the present invention.

In rejecting claim 5, the Examiner further contends that Phillips et al. and Fleeson together "disclose that in the building block the radio network bus is isolated from the RF control bus with electromagnetic shielding (figure 3 and column 33, lines 33-47)." The cited passage in column 33 merely suggests isolation of the common receive module and the common transmit module by shielding. Applicant, of course, concedes that electromagnetic shielding is a well known expedient to provide isolation of electronic components, but claim 5 has to do with isolating the network bus from the RF control bus and should, in any event, be allowable with the claims from which it depends.

In rejecting claims 6, 7 and 8, the Examiner further points out that Phillips et al. teaches the use of encryption modules. Applicant agrees that encryption is a commonly employed feature of communication systems, but disagrees with the Examiner's characterization of Phillips et al. and Fleeson as using encryption in "the building block." As discussed above, building blocks with multiple transceivers and a processor are not disclosed in the cited art.

In rejecting claim 9, the Examiner contends "that in the building block the radio network bus transfers transmission coordination data and voice and user data into and

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out of the building block (figure 3, column 22 lines 33-61, and column 26 line 27 – column 2 line 35).” The cited passages do not seem to be pertinent to the point the Examiner is making. Moreover, repeated use of the term “building block” in the Examiner’s comments implies a similarity to the present invention that simply does not exist.

In rejecting claim 10, the Examiner further contends that “the local RF control bus carries tuning data for the plurality of transceivers.” The cited passage in column 26 of Phillips et al. does not appear to support this contention. Again, use of the term “building block” implies a similarity to the present invention that does no exist.

In rejecting claim 11, the Examiner further contends that, as applied to claim 10, Phillips et al. and Fleeson disclose the claimed subject matter. The comments of the previous paragraph apply also to claim 11.

In rejecting claim 12, the Examiner contends that “in the building block the external control bus carries antenna configuration data” Once again, the contention has no merit unless one assumes the building block structure of the present invention.

In rejecting claim 13, the Examiner similarly contends that “the external control bus” of “the building block” carries the recited data. For the same reasons as stated for claim 12, this contention is also believed to be without merit.

The specific comments accompanying the rejection of claim 14 do not quite parallel those accompanying the rejection of claim 1. In rejecting claim 14, the Examiner equates the AIU 308 to the recited plurality of bi-directional receivers. There appears to be no basis in Phillips et al. for reaching this conclusion. The recited

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processor coupled to the transceivers is equated to blocks 310 and 312. These are optional data processing modules that have absolutely nothing to do with control of the transceiver function.

Bus 326 is again said to be the local RF control bus, but now that the "processor" is said to be blocks 310 and 312, the bus 326 is not in any way connected to the "processor" as recited in the claim.

These and other aspects of the claim analysis do not provide any logical way to read each element of the claim on the cited art. Overriding these specific difficulties is the fact that the cited art does not disclose or suggest a modular or building block architecture as disclosed and claimed by Applicant. Fleeson is relied on as in the rejection of claim 1, but is deficient for the reasons discussed above with respect to the lower numbered claims.

Dependent claims 15-18 should be allowable with independent claim 14 and for reasons similar to those discussed above with reference to the rejection of claims dependent on claim 1.

Claim 19, a method claim, was rejected using basically the same reasoning as in the rejection of claim 1. Claim 19 and its dependent claims 20-22 are believed to be allowable over the cited art for the same reasons discussed with reference to claim 1 and relevant dependent claims.

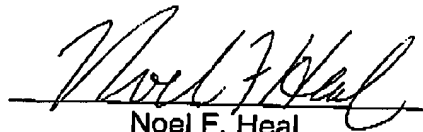
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In view of the foregoing, Applicant respectfully submits that claims 1, 2 and 4-22 are allowable over the cited art. Reconsideration and formal notification of allowance are respectfully requested.

Respectfully submitted,

Date: May 19, 2004


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